



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

June 21, 2013

Mr. William T. Walker
Chief, Regulatory Branch
Norfolk District, Corps of Engineers
803 Front Street
Norfolk, Virginia 23510-1096

Attn: Todd Miller, Regulatory Branch

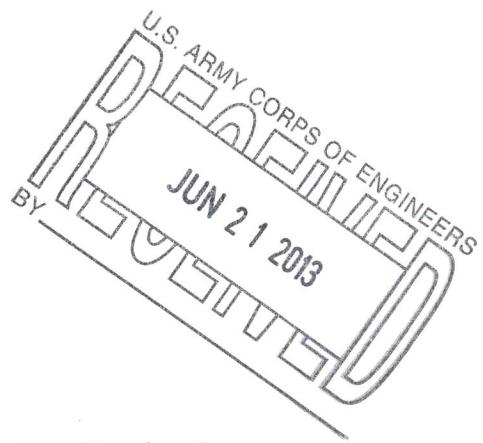
Re: Curles Neck Farm, Henrico County,
Virginia, Permit # 2013-SLI-1708

Dear Mr. Walker:

The U.S. Fish and Wildlife Service (Service) has reviewed the referenced project review package submitted by the Army Corps of Engineers (Corps) in accordance with our online project review process. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended, section 404 of the Clean Water Act (33 U.S.C. 1344 86 Stat. 816), Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668c, 54 Stat. 250) as amended, and the Fish and Wildlife Coordination Act (FWCA) of 1958 (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The applicant proposes to construct a sheet pile wall with associated rip rap along the southern boundary of Curles Neck Farm to manage the wetland and open water area of the farm for waterfowl habitat. The sheet pile wall would be 2,376 feet long and constructed between an existing dredge disposal area and an existing levee. Rip rap would be utilized to prevent scour along the wall. To gain access to the project area, the applicant proposes to construct a temporary loading area. This loading area will include a bulkhead to allow a barge to dock at the property. A channel would be dredged in the river to gain access to the area where the wall would be constructed. The barge would be used to transport material and equipment from the upland docking area to the project location. The proposed dredge area is 500 feet long and 40 feet wide. Approximately 1,114 cubic yards of material would be dredged for access, which would be deposited within upland fields on Curles Neck Farm.

Permanent impacts are expected to approximately 0.24 acres of tidal forested wetlands and 0.11 acres of subaqueous water bottom. Temporary impacts associated with access to the project area



consist of 0.65 acres of tidal forested wetland and 0.08 acres of subaqueous bottom. In addition, 1,114 cubic yards of material would be dredged from the James River.

Compensation for temporary project related impacts will include restoring the original contours and reseeding with native vegetation wetland mix. In addition the applicant proposes an additional 0.5-acre tidal forested mitigation area adjacent to the project site utilizing an existing drainage ditch to the James River to facilitate tidal exchange.

Endangered Species Act Comments

In the species conclusion table dated May 29, 2013, you determined there was no suitable habitat for the federally listed threatened sensitive joint-vetch (*Aeschynomene virginica*). Because a habitat assessment was not conducted, we do not concur with your determination of "no effect" to the sensitive joint-vetch. We recommend that a detailed habitat assessment be conducted for the sensitive joint-vetch by an approved surveyor in the action area to identify suitable habitat, and that a survey for the species be conducted within all suitable habitat identified in the action area. Surveys are not needed if the approved surveyor determines that no suitable habitat is present. A list of qualified surveyors can be found on our website at:

<http://www.fws.gov/northeast/virginiafield/endspecies/surveyors.html>. This list does not include all individuals qualified or authorized to survey for this species. If you select someone not on the pre-approved surveyor list, provide the proposed surveyor's qualifications and proposed survey design to this office for review and approval prior to initiating the survey. Send copies of all survey results to this office or inform this office if a survey will not be conducted. Sensitive joint-vetch surveys are valid for one year.

The Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) federally listed endangered, is documented to spawn in the James River. Therefore, we recommend no dredging or other construction activity that would affect the river, such as rip rap and sheet pile placement, from 15 February – 30 June of any year. In addition, the Service and the National Oceanic and Atmospheric Administration (NOAA) Fisheries share management responsibilities of the Atlantic sturgeon; we recommend you coordinate with Ms. Christine Vaccaro, NOAA Protected Resources Division (978-281-9167).

Based on the project description and location, it appears that no impacts to critical habitat will occur.

Bald and Golden Eagle Protection Act Comments

This project is located within a summer and winter Bald Eagle (*Haliaeetus leucocephalus*) concentration area. To avoid disturbance at foraging areas and communal roost sites in summer and winter, we recommend no rip rap or sheet pile placement be allowed from May 15 – August 31 and December 15 – March 15.

Fish and Wildlife Coordination Act Comments

The proposed project is immediately adjacent to the Presquile National Wildlife Refuge. This refuge is a 1329-acre island and was established in 1953 to protect wintering waterfowl and other migratory birds. In 1954, the portion of the James River that surrounds the refuge was closed to migratory bird hunting by Secretarial order, thus increasing the effectiveness of Presquile as a refuge. Approximately 200 species of birds have been observed at Presquile. Thirty of these species have been identified as priority species in the final draft of the New England/Mid-Atlantic Coast Bird Conservation Region (BCR 30) Implementation Plan (Atlantic Coast Joint Venture 2007). This plan identifies the bird species and habitats in greatest need of conservation action in this region.

This refuge is also located within the Lower James River Important Bird Area. The Important Bird Area Program is administered by the National Audubon Society and identifies sites that provide essential habitat to nesting, migrating, or wintering birds. This portion of the James supports large populations of birds that feed on fish, such as breeding and migrant bald eagles, breeding ospreys, and breeding great blue herons. This area contains extensive forested wetlands that support significant populations of prothonotary warblers and yellow-throated vireos. The prothonotary warbler and yellow-throated vireo are identified as high priority species in the New England/Mid-Atlantic Coast Bird Conservation Region (BCR 30) Implementation Plan (Atlantic Coast Joint Venture 2007).

In national wildlife refuge planning and management, six compatible uses receive priority consideration. The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), recently amended by P.L. 105-57, *The National Wildlife Refuge System Improvement Act of 1997*, identifies the six compatible wildlife-dependent recreational uses as hunting, fishing, wildlife observation and photography, and environmental education and interpretation. To support these compatible recreational uses, the Presquile National Wildlife Refuge has developed an agreement with the James River Association. This partnership promotes the use of the refuge for the purposes of environmental education, habitat improvement, and wildlife oriented projects.

The Service is concerned with the location of the proposed project due to its close proximity to the Presquile National Wildlife Refuge and its location within an important foraging and roosting area for the bald eagle. Dredge activity and other construction activity during early morning hours across from the refuge would negatively impact the wildlife viewing opportunities for students of the ecology school and other visitors to the refuge. Therefore, we recommend minimizing these activities during the early morning hours. The proposed project will also result in a temporary increase in the amount of barges and other watercraft in the James River next to Presquile National Wildlife Refuge. To minimize sediment resuspension, shoreline erosion, disturbance to fish and wildlife, and disturbance to the recreational users at the refuge, we recommend that the Corps require the applicant work with their contractors to minimize the wake created by barges or other watercraft used during construction. In addition, we recommend that the Corps require the applicant develop protocol with the contractor to minimize the introduction of invasive species to the proposed project area to reduce the threats of invasive

species entering the refuge, they communicate the work schedule to the Refuge staff to reduce conflicts between refuge activities and disturbance from the construction. Lastly, the applicant needs to define the location of the proposed flap gate so we can better address potential impacts.

If you have any questions, please contact preparer name of this office at (804) 693-6694, extension 128, or via email at sumalee_hoskin@fws.gov.

Sincerely,



Cindy Schulz
For Field Supervisor
Virginia Ecological Services

cc: USFWS, EVRC, Warsaw, VA (Attn: Andy Hofmann)
NOAA Fisheries, Gloucester, VA (Attn: David O'Brien)
VDGIF, Richmond, VA (Attn: Jeff Cooper)

Literature Cited

Atlantic Coast Joint Venture. 2007. DRAFT. New England/Mid-Atlantic Coast Bird Conservation Region (BCR 30) Implementation Plan. 269 pp. [online version available at http://www.acjv.org/documents/BCR30_June18_07_final_draft.pdf



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

JUN 20 2013

Colonel Paul B. Olsen
Commander
Norfolk District
U.S. Army Corps of Engineers
803 Front Street
Norfolk, VA 23508

Re: PCN, LLC, Curles Neck Farm; NAO-2012-2152, #12-V1534

Dear Colonel Olsen,

We have reviewed the information provided in the Public Notice regarding PCN, LLC's proposed construction of a sheet pile bulkhead and riprap scour protection within Curles Neck Creek, a tributary to the James River in Henrico County, Virginia. The purpose of the proposed project is to impound Curles Neck Creek for waterfowl management. The proposed construction includes a 2,654 linear foot steel sheet pile bulkhead with riprap scour protection that will result in direct impacts to 0.24 acres of tidal forested wetlands. In addition, 1,144 cubic yards of subaqueous river bottom will be dredged to provide an access channel from the James River onto the project site, and a 30 ft. temporary bulkhead will be constructed to offload equipment and materials. The construction of the proposed 2,654 ft. sheet pile bulkhead, filling of breaches, and operation of the existing tide gates in the closed position will effectively impound Curles Neck Creek for nearly eight months each year, directly impacting fisheries and having direct and secondary impacts to tidal emergent, scrub-shrub and forested wetlands. These impacts will result from modifying the system's tidal hydrology, directly reducing available fisheries habitat 80-94% within Curles Neck Swamp. Altered hydrology may adversely affect the wetland plant community over time. Secondary impacts to tidal wetlands resulting from the proposed project have not been adequately assessed or quantified by the applicant. No compensation is proposed for secondary impacts.

We note the mutually agreed upon project review process in our Memorandum of Agreement (MOA) concerning Section 404(q) of the Clean Water Act. Therefore, we offer the following comments and recommendations on this project pursuant to the above referenced regulatory construct as outlined in Part IV, Paragraph 3(b) of our interagency MOA.

General Comments

The James River and Curles Neck Creek are designated as confirmed anadromous fish use area by the Virginia Department of Game and Inland Fisheries for several species including striped bass (*Morone saxatilis*), American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*) and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). A fish study conducted by the Virginia Institute of Marine Sciences (VIMS) in 1982 (VIMS, 1982) confirmed the utilization of Curles Neck Creek by



anadromous fish for spawning (blueback herring, alewife, and white perch). Due to the greatly diminished status of river herring stocks (collectively blueback herring and alewife) compared to historic levels, the Atlantic States Marine Fisheries Commission (ASMFC) placed a harvest moratorium on river herring in 2012. The ASMFC's Interstate Fishery Management Plan (IFMP) for shad and river herring, and the IFMP for American eel are intended to both protect and enhance these stocks. In addition, river herring are being considered by NOAA Fisheries Service for listing under the Endangered Species Act (ESA) and American eel is being considered for listing by the US Fish and Wildlife Service (USFWS). Given the current depleted status of river herring stocks, significant regional efforts are underway to restore and improve anadromous fish passage. To compliment regional efforts, tremendous resources have been invested nationally by NOAA Fisheries Service, USFWS, U.S. Geological Survey (USGS) and numerous state agencies in efforts to protect, restore and enhance anadromous fish migration, spawning, rearing, production and nursery habitats. In light of these efforts, we are deeply concerned this project runs contrary to protection and restoration objectives and may exacerbate the diminished condition of local anadromous fish stocks.

An interagency site visit was conducted at Curles Neck Farm on December 19, 2012. It is our understanding that the former property owner constructed an unauthorized earthen dam with two (2) 48-inch culvert pipes (water control structures) in the 1960's to impound Curles Neck Creek. These culvert pipes were used to manipulate water levels and manage the area for waterfowl. An after-the-fact permit was subsequently issued in the 1980's authorizing these structures by the Virginia Marine Resources Commission (VMRC). A condition of the permit requires the water control structures to remain open between March 1 and July 7 every year to provide access to Curles Neck Creek for anadromous fish migration and spawning. Since that time natural breaches have formed between the James River and Curles Neck Creek, rendering the water control structures ineffective for impounding water and returning the tidal condition of the creek.

We believe the purpose and need of the project remain unclear. Pursuant to the Clean Water Act (CWA) Section 404 (b)(1) Guidelines, an alternatives analysis should demonstrate the proposed project is the least environmentally damaging practical alternative that achieves the stated project purpose. If the purpose of the project is to preserve and protect existing emergent, scrub-shrub and forested wetlands along Curles Neck Creek from projected sea level rise and permanent inundation, we believe less environmentally damaging practical alternatives exist. Properly grading and planting existing upland areas adjacent the tidal creek with native hydrophytic emergent, scrub-shrub and tree species, could maintain a tidal wetland system in perpetuity without the need to artificially manipulate the water levels of Curles Neck Creek. Before we evaluate the proposed tidal mitigation area (21,780 sq. ft.) to compensate for direct impacts associated with the 2,654 ft. bulkhead and scour protection, secondary impacts to tidal wetlands should also be quantified.

The applicant proposes to operate the two (2) existing 48-inch tide gates in the open position between March 1 and July 7 of each year to provide for anadromous fish migration and spawning. The applicant has also proposed the construction of an additional tide gate (design specifications and operational protocols not provided) to help improve fish passage in and out of the Curles Neck Creek system.

The VIMS fish study (VIMS, 1982) determined that adult river herring migrate through the two culvert pipes and spawn in Curles Neck Creek. However, the study did not evaluate the fate of larvae and juveniles post-spawning or the out-migration of adult and juvenile life stages. We note that the tide gate invert elevations, average tide range of the James River and Curles Neck Creek, and bathymetry data are lacking from the Joint Permit Application. Without sufficient supporting data, it cannot be determined whether the existing tide gates provide for the effective out-migration of adult and juvenile river herring and their recruitment to the local population.

In order to determine the effectiveness of the existing tide gate in passing fish out of Curles Neck Creek and to help identify whether an additional or re-designed structure(s) is necessary, the applicant should collect site-specific anadromous fish and hydrologic data over a three-year period before constructing the proposed bulkhead as recommended by Dr. Troy Tuckey, VIMS during the VMRC public hearing conducted May 28, 2013.

Water temperature and photoperiod (daylight) are understood to trigger anadromous fish spawning runs in the James River. In the future, climatic factors such as increasing global temperatures and sea level rise may significantly affect the timing of anadromous fish spawning runs whereby the proposed operational “window” (March 1 – July 7) of the tide gate may be opened too late to accommodate in-migrating alewife during the late winter/early spring of warmer years or closed too early. The applicant should collect site-specific anadromous fish data to determine the appropriate operational time period of the water control structures to pass in-migrating fish and allow for the out-migration of adult and juvenile life stages.

Therefore, based on a lack of information on the direct and secondary impacts to tidal wetlands and direct impacts to anadromous fish habitat, we must conclude that this project will have substantial and unacceptable adverse affect on aquatic resources of national importance pursuant to Part IV, Paragraph 3(b) of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement (MOA) between our agencies. We recommend pursuant to Part IV, Paragraph 3(b) of the MOA that you adopt the following recommendations:

1. Conduct an alternatives analysis which demonstrates the proposed project is the least environmentally damaging practical alternative for protecting the forested wetland system of Curles Neck Creek from inundation associated with climate change.
2. Quantify the project’s secondary impacts to tidal wetlands and demonstrate that avoidance and minimization measures have been employed during the project design process to reduce direct and secondary wetland impacts to those which are unavoidable.
3. Collect site-specific anadromous fish and hydrologic data over a three-year period prior to construction of the proposed bulkhead to determine the effectiveness of the existing tide gate in passing fish out of Curles Neck Creek and to help identify whether an additional or re-designed structure(s) is necessary. This will also allow us to determine the effectiveness of the March 1 through July 7 operational window of the tide gates to pass fish in and out of Curles Neck Creek. The scope of this study should be coordinated with NOAA Fisheries.

4. Should the above activities and studies not be undertaken, we recommend that the project be denied in its entirety.

Threatened and Endangered Species

The federally listed Atlantic sturgeon is documented to occur and spawn in the James River. Please note that you have consultation responsibilities regarding this project's potential to impact threatened and endangered species under the purview of NOAA Fisheries Service. Therefore, please contact Ms. Christine Vaccaro, NOAA Protected Resources Division (978-281-9167) to discuss your consultation obligations under Section 7 of the Endangered Species Act (ESA) regarding the federally listed Atlantic sturgeon.

Thank you for the opportunity to review the Curles Neck Farm project. We maintain that adverse impacts to fishery resources and habitats have not been adequately evaluated. Therefore, we must conclude that the proposed projects will result in significant impacts to aquatic resources of national importance. We look forward to your response to our recommendations pursuant to Part IV, Paragraph 3(c) of our MOA. Please contact Mr. David O'Brien at 804-684-7828 (david.l.o'brien@noaa.gov) if you have any questions regarding these recommendations or receive additional information which significantly changes the elements of the project upon which our comments are based.

Sincerely,



[Signature]
John K. Bullard
Regional Administrator

cc: Todd Miller, NAO Corps
Tom Walker, NAO Corps
Juliette Giordano, VMRC
Amy Ewing, VDGIF
Lyle Varnell, VIMS
Sumalee Hoskins, USFWS

References

Priest, Walter. 1982. Report on Anadromous Fish Utilization of Curles Neck Creek.
Virginia Institute of Marine Science, Gloucester Point, Virginia.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

June 20, 2013

Mr. Thomas Walker
Chief, Regulatory Branch
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

Re: PN: NAO-2012-2152; 4705 Curles Neck Road, Henrico, VA 23231

Dear Mr. Walker:

The U.S. Environmental Protection Agency (EPA) has completed its review of the proposed construction of a 3 foot high sheet pile wall including the placement of riprap on the James River at Curles Neck Farm in Richmond, VA. The applicant, Mr. Tommy Pruitt, proposes to fill waters of the United States (WOUS) for the purpose of managing a wetland and open water area for waterfowl habitat.

The proposed project is in the watershed of the James River. As proposed, permanent impacts will occur to approximately 0.24 acres of tidal forested wetlands and 0.11 acres of subaqueous water bottom. Temporary impacts include 0.65 acres of tidal forested wetland and 0.8 acre of subaqueous bottom, as well as 1,114 cubic yards dredged from the James River in order for a barge to transport construction materials to the project site. To mitigate for temporary impacts, the applicant intends to restore the areas to their original contours as well as reseed with a native wetland mix. Additionally, the applicant proposes to construct a 0.5 acre tidal forested mitigation area next to the project site while taking advantage of a drainage ditch to ensure tidal exchange with the James River.

EPA's review is intended to ensure that the proposed project meets the requirements of the Clean Water Act (CWA). The CWA Section 404(b)(1) Guidelines (Guidelines) (40 C.F.R. Part 230) provide the substantive environmental criteria against which the application must be considered.

After considering the information available, EPA recommends that the permit be denied. EPA's conclusion is based upon a lack of information in the following areas: clarification of the purpose and need for the project, analysis of alternatives, additional avoidance and minimization measures, a secondary and cumulative impacts analysis, and a description of the proposed

mitigation. The enclosure describes EPA's review in greater detail and provides specific comments and questions.

EPA does not believe the project is justified based upon its stated purpose and need, as the lengthy historical record of the Curles Neck property indicates it has been used as hunting and recreational grounds for generations without use of a steel barrier; moreover, the tidal gates that have been used for controlling water levels in the marsh have been successfully operational for decades. EPA's concerns lie in the use of a physical barrier which will impact the natural fluctuations of flow and water chemistry that are vital to the ecosystem and should not be altered.

The 404(b)(1) Guidelines restrict fills in WOUS where there is a practicable alternative that would have less adverse impact on the aquatic ecosystem. Ultimately, the permit issued by the Corps must reflect the LEDPA (least environmentally damaging practicable alternative) 40 C.F.R. § 230.10 (a). EPA does not believe the applicant evaluated the full array of alternatives available in order to avoid and minimize damage to aquatic resources. EPA suggests the applicant revisit the alternatives analysis and provide a more detailed thorough vetting of a full range of practicable alternatives, including functional design alternatives that incorporate all practicable avoidance and minimization measures for the site location. Modifications that will avoid and minimize impacts on-site and off-site should be identified and explored to their fullest extent, including alternatives to the dredging of the James River.

In addition to the potential direct effects of the proposed project, EPA is very concerned with the potential secondary effects to the aquatic ecosystem that may result. It is assumed that by building a sheet pile wall in between the wetlands of Curles Neck and the James River, direct tidal influence at the project site will be diminished to an even greater extent than it has been since the original levee was built. This additional loss of hydrology could have potentially far-reaching consequences for the area's vegetation, soil composition, and wildlife; it is estimated to be approximately 900 acres. Additionally, the impacts from dredging should be considered in relation to the sensitivity of the area. Careful consideration must be given to the possibility of cumulative impacts caused by the dredging in addition to the adjacent sand and gravel mining operations.

EPA asks that the applicant consider the far-ranging impacts to an area that is treasured both historically and ecologically. Curles Neck Farm is listed on the National Register of Historic Places, and is also a "Priority Wetland" under the Fish and Wildlife Service's Emergency Wetland Resources Act of 1986, which aims to protect those wetlands which offer a unique value for recreation, water quality, and habitat for threatened and endangered species. The area within the project scope has a variety of habitat types, including emergent marsh and wooded wetlands. Bald eagles, as well as one of the largest colonies of blue herons in the state of Virginia, winter there, and the biodiversity of both bird and mammal species warrants special protection. To the east and across the James River, the 1,329-acre Presquile National Wildlife Refuge is also a safe haven for wildlife, and any potential impacts to the area must be seriously considered. The Guidelines address ways refuges may be affected by the discharge of dredged or fill material. The possible loss of values include: disruption of the breeding, spawning,

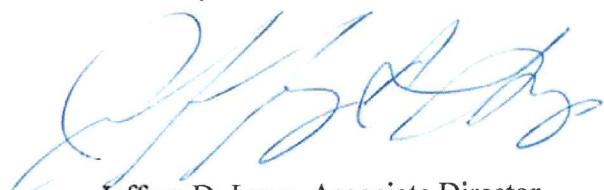
migratory movements or other critical life requirements of resident or transient fish and wildlife resources; in the establishment of undesirable competitive species of plants and animals; change the balance of water and land areas needed to provide cover, food, and other fish and wildlife habitat requirements in a way that modifies sanctuary or refuge management practices; and result other adverse impacts (40 CFR 230.40(b)(1-6).

Mitigation for wetland impacts is proposed through a combination of reseeding of native wetland vegetation onsite and construction of a tidally-influenced wetland off-site. Because of the secondary impacts discussed above, EPA requests that additional mitigation be required in addition to that for the direct impact of 0.24 acres of tidal forested wetlands, 0.11 acres of subaqueous bottom, and 1,114 cubic yards of dredged material from the James River.

EPA recommends that as proposed the project permit be denied, as it does not currently comply with the Section 404(b)(1) Guidelines. Detailed comments and additional information needs for this proposal can be found in the enclosure.

Thank you for the opportunity to provide comments. If you have questions, please do not hesitate to contact Ms. Carol Petrow, staff contact, at 215-814-2789 or by email at petrow.carol@epa.gov.

Sincerely,



Jeffrey D. Lapp, Associate Director
Office of Environmental Programs

[Enclosure]

NAO-2012-2152 Mr. Tommy Pruitt (Curles Neck Farm) Enclosure

How does the status of Curles Neck Farm as a King's Grant affect application of the 404(b)(1) guidelines?

What is the mean low water height and the mean high water height of the James River at the site of this project? What is the mean low water height and mean high water height of the wetlands of Curles Neck?

How often and to what extent are the gates used to control the hydraulics of the wetlands in Curles Neck Farm (i.e. what is the average inundation level without use of the gates, how often is it lowered, and how often are mud flats exposed)?

Please describe the condition of the earthen levee that dates to 1968. How high is it, and what is its degree of functionality?

Why does the applicant need to install a sheet pile wall when tides have been successfully manipulated via the gates for the purpose of duck hunting and wetland management in the past several decades?

John Boon of the Virginia Institute of Marine Science issued a report in 2012 which estimated a 2.03 foot sea level increase by 2050. The USGS issued a statement last year which stated that rates of sea level rise are 3-4 times faster along portions of the U.S. Atlantic Coast than on a global scale. The agency states that in this century, places like Norfolk, VA will experience an 8 to 11.4 inch sea level rise, in addition to the increase from global sea level rise (which the agency determined in 2008 would be much greater than the IPCC AR4 projections of 0.92 feet to 1.38 feet by 2100). Please provide the projection(s) used by the applicant to predict sea level rise on the James River. In doing so, please explain why a height of 3 feet specifically was chosen for the sheet pile wall.

What are the anticipated negative effects on waterfowl and the wetlands if the sheet pile wall is not built, and sea level rise occurs?

Does the applicant have any baseline data regarding the marshes' plant communities, submerged aquatic vegetation, soil profiles, threatened and endangered species, and hydroperiods?

Is there a possibility of this project having an impact on the neighboring sand and gravel dredging operation or the Presquile National Wildlife Refuge?

Please explain the advantages afforded by the use of sheet pile with riprap as opposed to additional tree plantings, extending the earthen berm, or other materials.

The wall is to be approximately 2,600 feet and will run through a mostly wooded area. How much vegetation would be removed from the southern portion of Curles Neck as construction of the sheet pile wall takes place? What are the predicted impacts of equipment access to this wooded area?

Will the applicant replace riparian vegetation along the James River?

The dredge material is to be placed at an upland area on Curles Neck. Please elaborate on the location of its placement, proximity to waters, and if it will be tested beforehand for contaminants.

Due to its listing on the National Register of Historic Places as well as a “Priority Wetland,” does the applicant have any restrictions on development of the property?

How will the applicant ensure the area that is to be walled off from the James River is in stable, if not better condition, as compared to its current status? EPA recommends a rigorous monitoring plan that will encompass the 900 acre area, rather than the directly impacted area, and will include careful assessment of the plant communities, wildlife, soil alterations, and hydrological changes to the site.

In terms of the off-site mitigatory wetland, please clarify the exact location of the project, as well as the ditch which will provide for tidal exchange with the James River.

Would utilizing the sand and gravel pit as a launch for a barge obviate the need for dredging of the James River?

Are there any threatened and endangered species to consider in the execution of this project? We are fully supportive of the recommendations of resource agencies.

What is the substrate of the James River at the geographical location of the project? How can the project applicant ensure that sediment transport to the wetlands within Curles Neck, as well as downstream of the project area, is not altered by the cumulative impacts of the sand and gravel operation, the sheet pile wall, and the tidal gates?

The applicant states that the gates will be managed to allow for annual anadromous fish passage on the James River into the management area. Please describe the monitoring efforts that will ensure populations are able to successfully use the gate structure and spawn in light of water level adjustments.

Douglas W. Domenech
Secretary of Natural Resources



David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Division of Natural Heritage
217 Governor Street
Richmond, Virginia 23219-2010
(804) 786-7951

June 17, 2013

Norfolk District, Corps of Engineers
ATTN: Todd Miller
9100 Arboretum Parkway, Suite 235
Richmond, VA 23236

Re: NAO-2012-2152, Sheet Wall Construction at Curles Neck Farm

Dear Mr. Miller:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the James River – Turkey Island Creek Stream Conservation Unit (SCU) is located within the project site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are given a biodiversity significance ranking based on the rarity, quality, and number of occurrences they contain; on a scale of 1-5, 1 being the most significant. The James River - Turkey Island Creek SCU has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this SCU is:

Acipenser oxyrinchus

Atlantic sturgeon

G3/S2/LE/LT

Atlantic sturgeon is a large fish that reaches a maximum length of about 4.3 meters and may live for several decades. The adults migrate between fresh water spawning areas and salt water non-spawning areas. They feed primarily on benthic invertebrates and small fishes as available.

Stocks on the Atlantic slope have been severely reduced by overfishing (mainly late 1800s and early 1900s), pollution, sedimentation, and blockage of access to spawning areas by dams (Gilbert 1989, Burkhead and Jenkins 1991, Marine and Coastal Species Information System 1996). In Chesapeake Bay and elsewhere in the range, hypoxic events have increased and may degrade nursery habitat for Atlantic sturgeon (Secor and Gunderson 1997). Habitat loss due to dam construction and water pollution are thought to be major factors impeding full recovery of populations (Smith 1985, cited by Johnson et al. 1997; Gilbert 1989). A late maturation age and use of estuaries, coastal bays, and upstream areas of rivers

for spawning and juvenile development make stocks vulnerable to habitat alterations in many areas (NatureServe 2012). Please note that this species is currently classified as endangered by the United States Fish and Wildlife Service (USFWS) and threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

In addition, the Curles Neck Conservation Site is located in the vicinity of the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Curles Neck Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resource at this site is:

<i>Aeschynomene virginica</i>	Sensitive joint-vetch	G2/S2/LT/LT
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Sensitive joint-vetch is a bristly stemmed annual legume growing to 2 meters in height. The characteristic pinnately divided leaves are gland-dotted and may fold slightly if touched. The pea-shaped flowers are yellow streaked with orange-red. This legume occurs in freshwater to brackish wetland habitats, primarily marshes, in the intertidal zone of our larger coastal rivers. This habitat type often supports a high diversity of both rare and common plant species. This annual herbaceous plant is classified as federally listed by the United States Fish and Wildlife Service (USFWS) and stated listed by the Virginia Department of Agriculture and Consumer Services (VDACS).

To thrive, sensitive joint-vetch may require minimal competition from other plants. For this reason, plants are frequently found on accreting point bars and levees that have not yet been colonized by perennial species. Sensitive joint-vetch populations however, may also be found within marsh interiors. Researchers believe that these plants may be able to thrive there because of harsh soil and nutrient conditions that inhibit growth of potential competitors. An additional theory for the sensitive joint-vetch occurring at those locations is that grazing herbivores, such as muskrat (*Ondatra zibethicus*), eat large areas of vegetation ("muskrat eat-outs") leaving behind exposed soils that are more easily colonized by annuals.

Populations face many potential on-site and off-site threats, including activities that alter natural river currents and sediment cycling and, thereby, prevent the development of accreting point-bar habitats for the species and/or cause erosion of that habitat. Other potential threats include activities which result in increased salinity levels, water pollution, displacement by aggressive species, and activities which result in excessive sediment loading which could inhibit germination of seeds or smother seedlings (USFWS, 1995). Sensitive joint-vetch is currently known from about 30 locations in Virginia's coastal plain, 10 of which are historical occurrences. Surveys for Sensitive joint-vetch should be conducted from August 15 to October 15. At this time the plant is in flower or fruit and has attained some stature making it more visible during the surveys typically conducted from a boat.

Due to the potential for this site to support populations of Sensitive joint-vetch, DCR recommends an inventory for the resource in the project area.

DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at chris.ludwig@dcr.virginia.gov or 804-371-6206 to discuss arrangements for field work. A list of other individuals who are qualified to conduct inventories may be obtained from the USFWS.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. Survey results should be coordinated with DCR-DNH and USFWS. Upon review of the results, if it is determined the species is present, and there is a likelihood of a negative impact on the species, DCR-DNH will recommend coordination with VDACS to ensure compliance with Virginia's Endangered Plant and Insect Species Act.

Due to the legal status of Sensitive joint-vetch and the Atlantic sturgeon, DCR recommends coordination with the U.S. Fish and Wildlife Service (USFWS). Due to the legal status of the Atlantic sturgeon, DCR also recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). DCR recommends another alternative be considered for scour protection in lieu of grouted riprap.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov).

Should you have any questions or concerns, feel free to contact me at 804-692-0984. Thank you for the opportunity to comment on this project.

Sincerely,



Alli Baird, LA, ASLA
Coastal Zone Locality Liaison

Cc: Kim Smith, USFWS
Amy Ewing, VDGIF

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